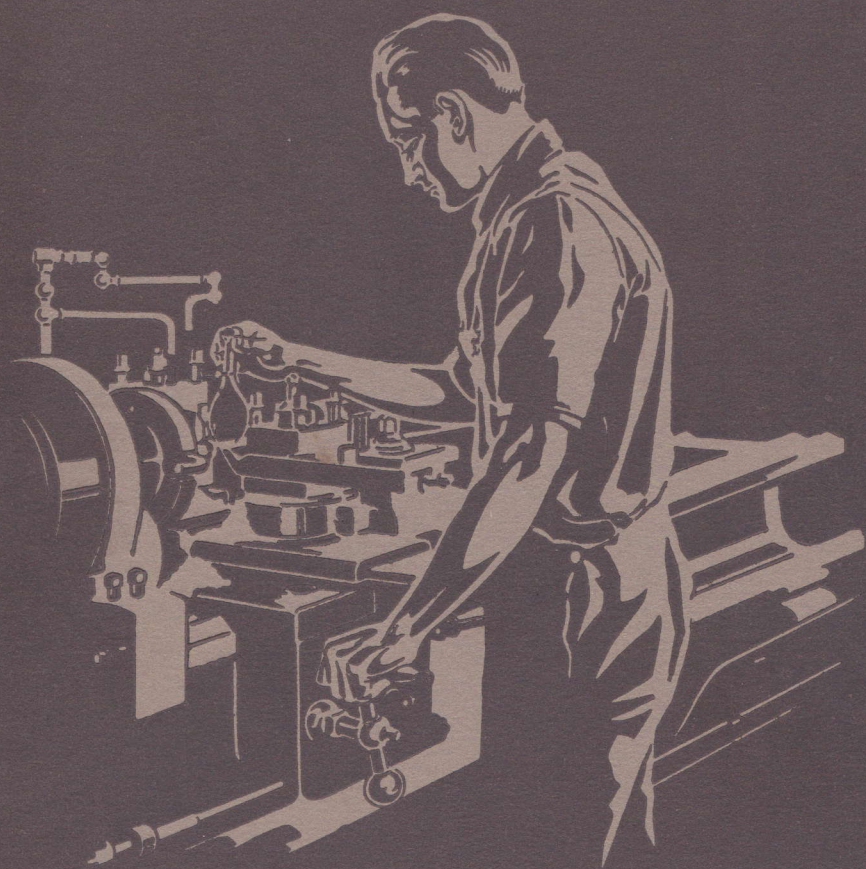


# Apprenticeship



BROWN & SHARPE MFG. CO.  
PROVIDENCE, R.I., U.S.A.



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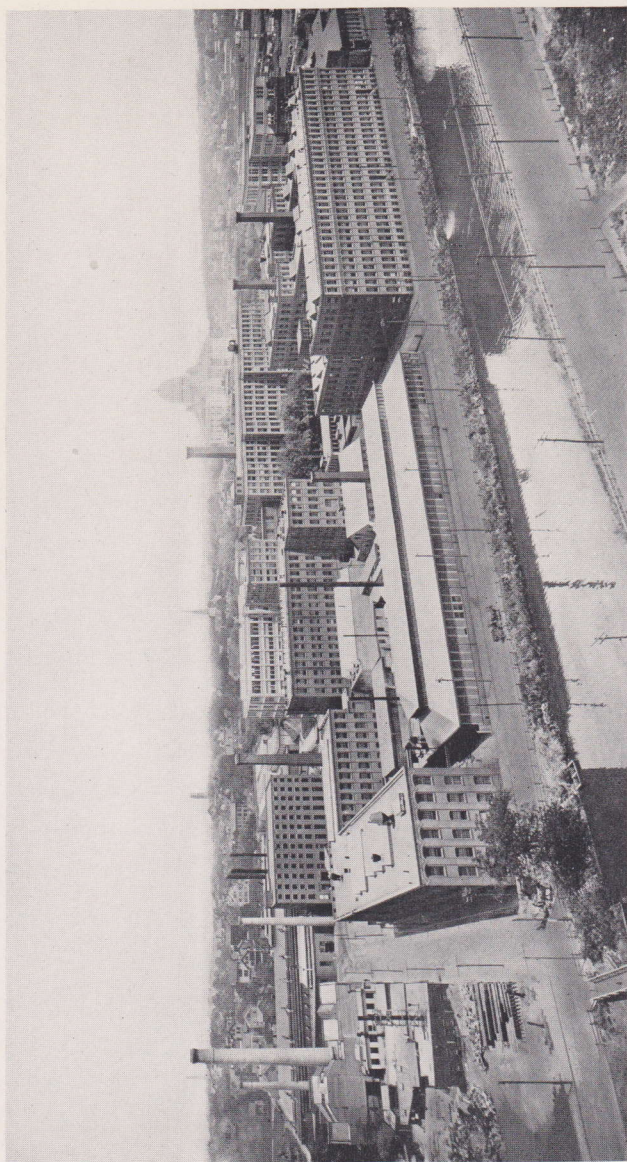
# Apprenticeship

BROWN & SHARPE MFG. CO.  
PROVIDENCE, R. I., U.S.A.

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Works of the Brown & Sharpe Mfg. Co., Providence, R. I., U. S. A.

Makers of Fine Machinery and Tools

Where about 200 apprentices are regularly being trained in six trades



# Apprenticeship

For the boy who wants to gain  
intelligence and skill in the making  
of machinery and tools



BROWN & SHARPE MFG. CO.

Providence, R. I., U. S. A.

Copyright, 1919, by Brown & Sharpe Mfg. Co.

Events are more and more proving the great importance of the trained builder of machinery to the work of the world. Thinking parents and boys with a conception of the immense scope of the mechanics' arts will appreciate the value of a training such as we offer.



## Introduction

THE Apprenticeship System of the Brown & Sharpe Mfg. Co. is described and illustrated in the following pages with the purpose of giving information as to what constitutes the learning of a trade in our works, entrance requirements, conditions of service, and lines of advancement which may follow the successful completion of such an apprenticeship.

The greatest emphasis is placed on the machinist's trade, because it is at the foundation of our business. In addition to this trade apprentices are taken in drafting, pattern making, moulding, core making and blacksmithing.

## Choosing a Trade

TOO many boys make failures because they take the first job that comes along. Even those who choose a trade sometimes choose the wrong one — one for which they are not suited — and, consequently, are not as successful as they might have been.

The choice of a trade should be made a subject for serious consideration. No sudden impulse should be allowed to decide the question, and the advice of friends, no matter how well meaning they may be, should not be acted upon unless intelligently given.

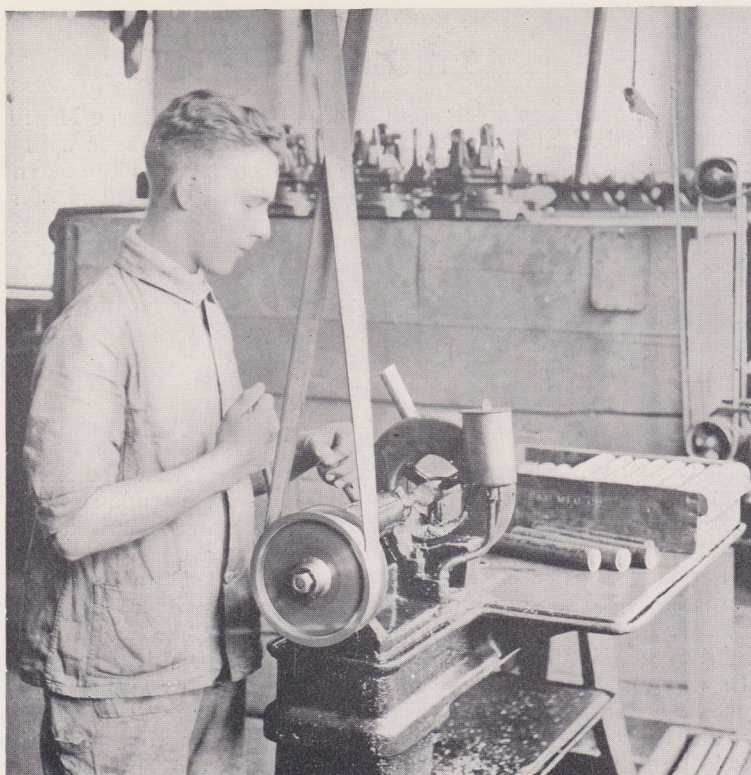
In many cases the boy doesn't know what he wants to do because he is ignorant of the trades, the kinds of work that they call for and their lines of advancement. Advice as to these things should be given by some one who knows both the boy and something about the trades.

Whenever it is possible we prefer to have the interested boy come to our works so that we may personally talk the matter over with him and better judge as to whether he is suited for the trade that he elects.

## Character of Apprenticeship

IN each of the trades above referred to such a variety of work is provided as to give experience in various branches of the trade, including school work of such a character as to be of direct help in that particular line of work, and such as will tend to preserve the balance in the training of head and hand. The school work is done during working hours, under the direction of instructors provided by the Company, and apprentices are paid for the time spent in school at their regular rates.

We believe that if there were a fuller knowledge of the kind of training given and of the opportunities for advancement following an apprenticeship which the future holds out to boys of energy and ability, who are mechanically inclined, there would be a greater interest shown in taking up such a form of training.



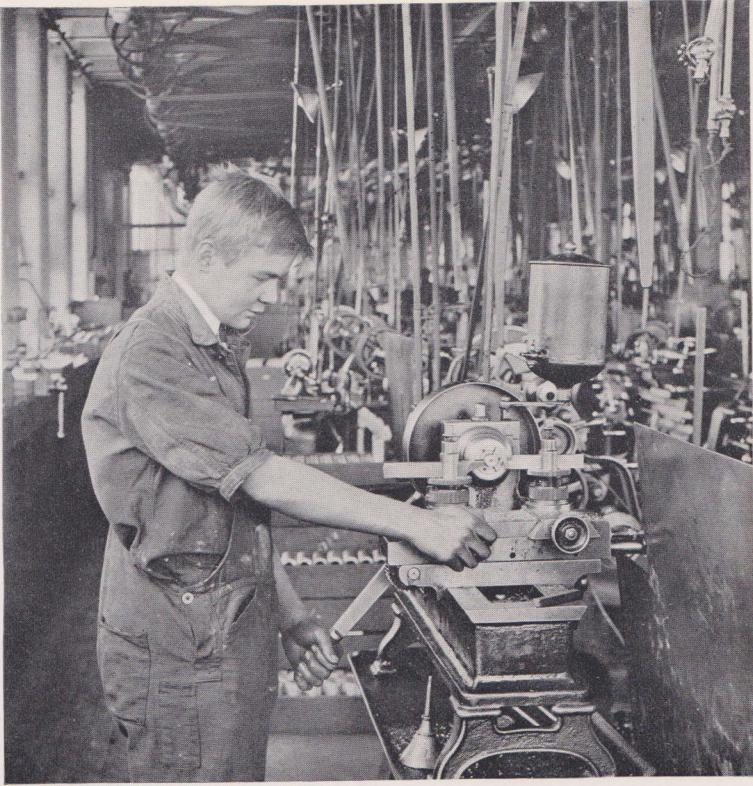
Operating Centering Machine

We believe, also, that there is no adequate substitute for training as given by a regular apprenticeship. Even a graduate of a technical college must serve some form of apprenticeship if he is to become most efficient in his line of work. Not a smattering of information, but a thorough knowledge of his work is what we believe a young man should have if he is to become successful. His training course must be so planned that he will not only *learn* how to do things but will *remember* how to do them by enough repetition to insure a continued understanding.

## The Purpose of an Apprenticeship

**I**N the Report of the Apprenticeship Committee of the National Metal Trades' Association it is stated that "the purpose of training an apprentice is to make him a skilled workman, and owing to the trend of the trades at the present time, where specialization is becoming so pronounced, it is a case of training work-



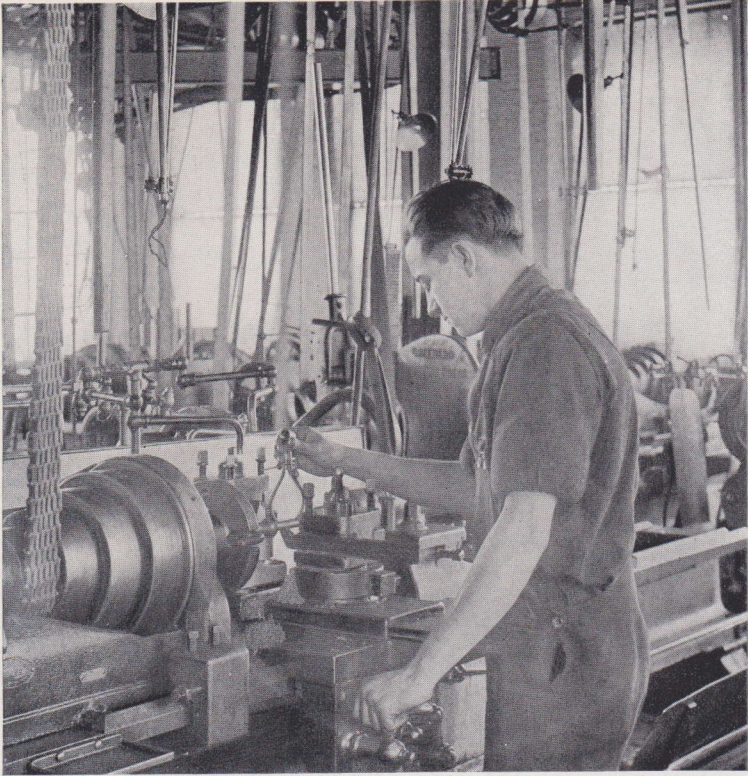


Operating Shaving Machine

men to become so skilled in their work that they can readily take under their charge and impart to others that knowledge of their skill which makes these other men, who are not able to become completely educated in the trade, best skilled in the class of work that they have to do. There are cases of men who have a varied technical education with but little hand training, who are making most successful leaders of men ; but where one such man as this is required, hundreds are demanded who must give not only of their technical knowledge, but of their skill, acquired by manual labor, oft repeated.

" We would not advocate any system of training which would have for its ulterior end the working of a man into a groove, from which he could not escape. This is farthest from our thought ; but we would have him win his way out through the application of that skill by his ability to command — no, not command, but lead — others into lines of work which eventually would much better their condition."





Lathe Work

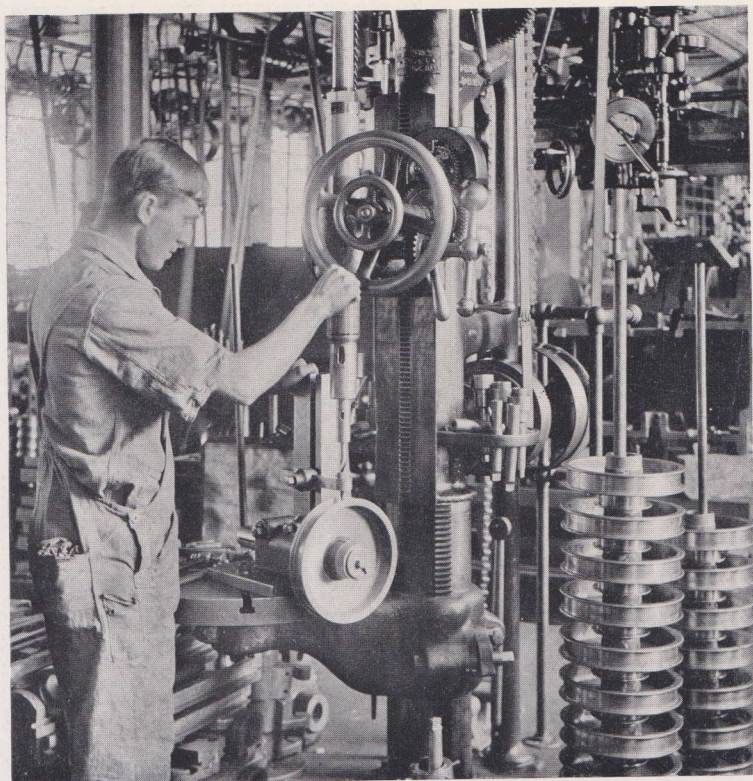
The purpose of our apprenticeships is to completely educate young men in their chosen trades so that they can qualify with us, or elsewhere in the machine industry, as highly skilled workmen and as leaders of those who have not had the advantage of a general training.

### Lines of Advancement

**F**ROM the early days of the business, through a period of about seventy years, it has been the policy of the Brown & Sharpe Mfg. Co. to take apprentices, and they have proved important factors in the development of the business, as well as by this means preparing themselves for a worthy and successful life work.

Throughout his apprenticeship the boy is systematically brought in touch with different officials of the Company, affording an opportunity for an exchange of views and for mutually helpful





Drilling by Use of a "Jig"

suggestions. This system also enables us to make a fairer and more intelligent estimate of the boy from time to time and to develop him along lines for which he shows a particular aptitude. After the completion of his course he is kept sight of and advanced according to his ability to do the work called for in higher positions.

Many of our most important positions are filled by past apprentices. Several department foremen and many sub-foremen are former apprentices and responsible positions in the Superintendent's Department, Engineering and Drafting Departments and Sales Department are held by men trained in our apprentice courses. Many graduates are employed with us as skilled mechanics and tool makers and a large number now hold positions of responsibility, or requiring skill, elsewhere in the machine industry — positions where the start and the advancement were dependent on the training received as an apprentice in our works.





## Division of Work

WITH the modern factory system there is such a subdivision of work that operations, even on the same piece, are carried on in widely separated departments. In order to learn the machinist's trade in such a shop it is necessary for a boy to be transferred from one department to another, learning each part of the work in the department where it is done.

Such a plan is carried out at our works, the boys starting with the simpler operations and being gradually advanced to work requiring a greater degree of skill. They are also given training in many branches of the trade which are somewhat special in character, but which help to give a well-rounded-out experience.

As typical of some of the classes of work apprentices may have during their term of service a series of illustrations is shown arranged approximately in the order in which the work is taken up. By such a varied training the apprentices gain experience in many departments in our factory, and, as during this time they work side by side with trained men, they have an opportunity to learn from observing the work going on around them as well as from that which they do themselves. This transferring into various departments also brings the apprentice in contact with many foremen, and a mutual acquaintance is thus formed which is helpful in determining the boy's value, and is also helpful in getting him into the spirit of the shop and its personnel.

Some of the lines of work which the machinist apprentices regularly take up are centering, lathe work, drilling by the use of jigs, also where laying out the work is required, milling, fitting, assembling, screw cutting, grinding, scraping, planing, gear cutting, repair work, screw machine operating and tool making.

Work in fitting and assembling grinding, gear cutting and screw machines precedes the operating of these machines to give familiarity with their mechanism and method of operation before being called upon to use them.

Definite periods, scheduled by the Apprentice Department, are spent on each class of work, in both the machine shop and the foundry, and transfers to the different departments are made in a regular and systematic order.

## School Course

THE school conducted in connection with the machinists' apprenticeship course gives instruction in machine-shop mathematics, including linear and angular measurement, screw threads and gearing, calculating feeds and speeds of machinery, indexing, etc., and in drafting, including jig and fixture work, cams, mechanisms, etc., all applied directly to the work of the shop. This is in the form of lesson sheets on which the work is done by the apprentices, and which become their property at the completion of their apprenticeship, so that they can make use of them in their later work. The course also includes working from samples, making





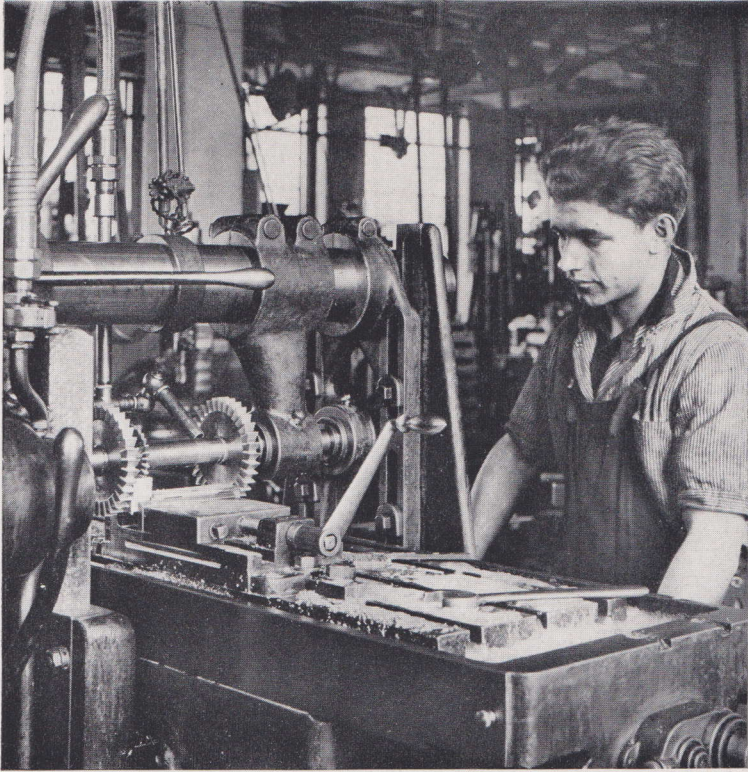
Laying Out Work for Drilling

working drawings from the same, such as would be required in repair work ; also in the planning and designing of tool equipments, thus giving familiarity with the most economical methods of shop production. As far as possible there is correlation between shop and school work during the course of apprenticeship.

Examples are selected from the actual work of the shop and in that way become real problems which arise in connection with the ordinary requirements of the trade.

Problems are approached from a standpoint somewhat different from that which is usual. Without the use of text-books, and without the learning of rules and formulas, problems are presented as they would arise in the shop, except that they are in regular sequence as to subject and difficulty. They are taken up with such reference books and tables at hand as should be in the possession of intelligent workmen, and the boys are taught to use such means to solve the problems. They are not taught algebra, geometry, trigonometry, etc., as such, but are instructed in the application of the principles of these subjects to the practical problems of the shop.





Operating a Milling Machine

The whole course is directed to cultivating the reasoning powers, and power of observation, rather than to memorizing rules.

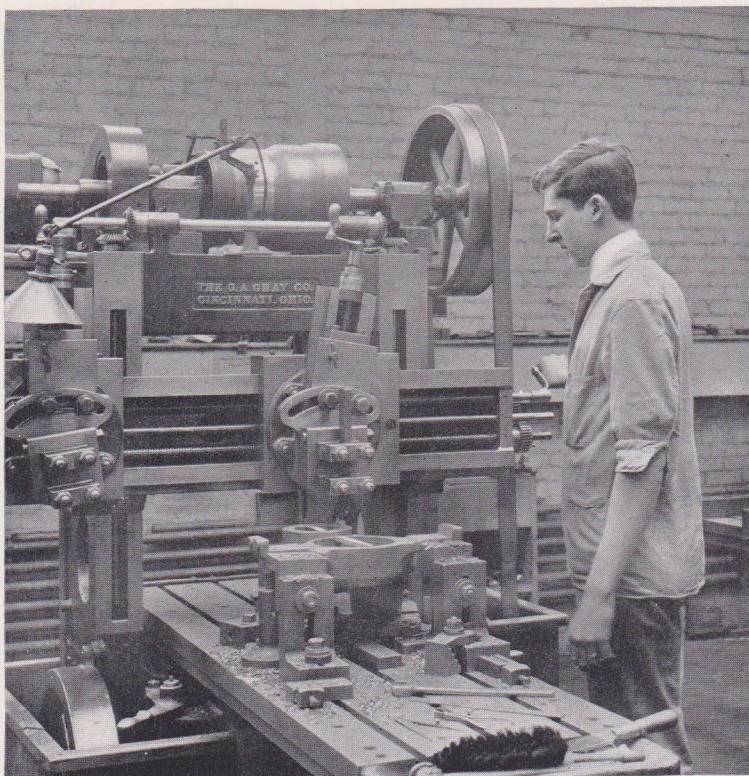
As an aid to this part of the apprentice course, a handbook has been prepared for the use of apprenticed machinists, giving instructions and information of direct help to them in carrying on their work, and a copy is presented to each apprentice.

The machinist apprentices devote two hours per week to the school work during the first two years of their apprenticeship, and four hours per week during the last two years.

### Apprentice Department

**A**LL apprentice work is carried on through the Apprentice Department, under the direction of the Supervisor of Apprentices, who looks to the welfare of the boys outside as well as inside the works. The personnel of this department includes office assistants, class instructors and shop instructors. The shop instructors do not relieve the foremen of any responsibility in regard to the boys, but act as an additional help to both.





Operating a Planer

## Safety and Sanitation

**G**REAT care is taken in safeguarding machinery and other points of danger throughout the works, in giving instructions as to safe methods of working, and in maintaining a high standard from a sanitary standpoint. A well equipped dispensary with physicians and nurses in attendance may be used by apprentices not only in case of injury but for treatment of illness occurring while in the works.

## Boys Eligible — Machinist Apprenticeship

**T**O be eligible for a machinist apprenticeship a boy must be not less than sixteen nor more than eighteen years of age. He must have had a good common school education, equivalent to graduation from the grammar schools of Providence, and a sufficient degree of physical development to fit him for the trade. Only boys of good habits, whose sight and hearing are unimpaired, are accepted. Boys addicted to the use of cigarettes are not favored





Scraping Surface Plates

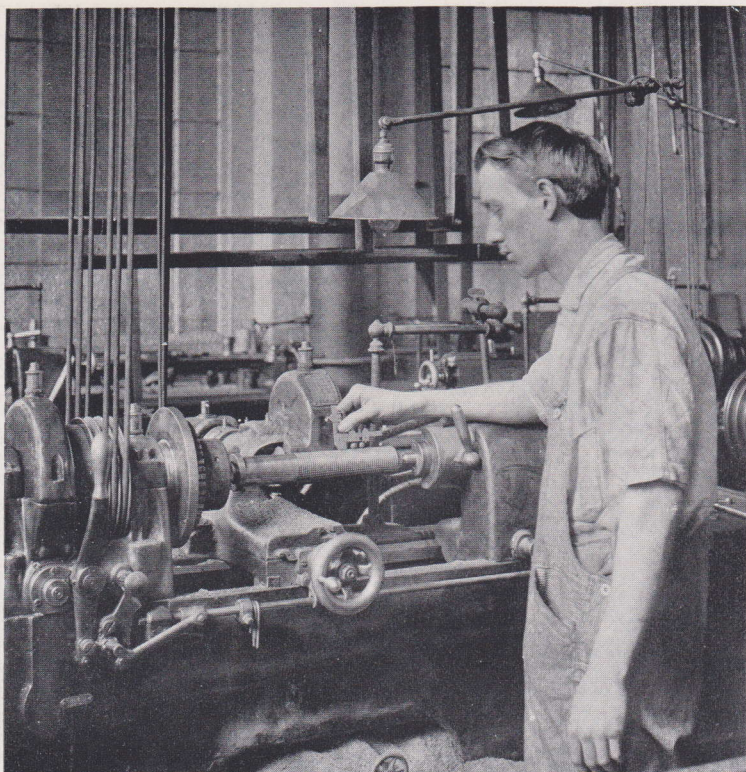
as apprentices, nor are boys who are simply "tired of school" and looking for a job in order to escape school work. It is important that boys should be mechanically inclined, and have a natural perception of mechanical matters, if they are to make a success of this line of work.

A preliminary examination is ordinarily required to show how much knowledge the boy has of simple mathematics, including fractions, decimals, percentage, ratio and proportion, square root, mensuration, etc.

If the applicant lives within a short distance of Providence we prefer that he come to our works for an interview and to take his examinations, but in case this is not convenient we will arrange for the examinations to be taken in the applicant's home town, under proper supervision.

Candidates for apprenticeship whose examination and references are satisfactory are assigned a date on which to begin the course. The first twelve weeks constitute a trial period and if accepted at the end of this period the time served becomes a part of the first





Screw Cutting on a Thread Milling Machine

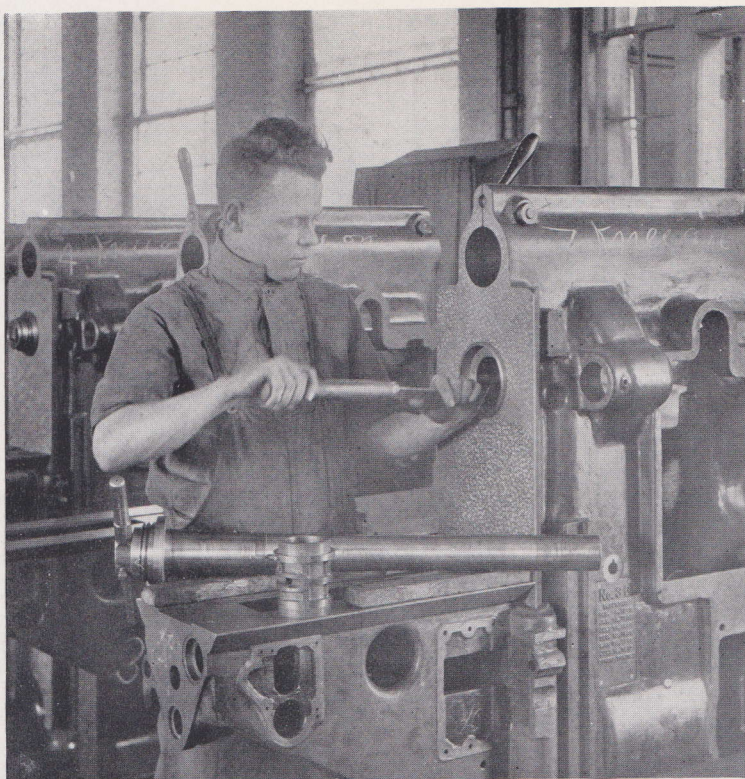
year of apprenticeship. During this trial period the candidate is loaned a set of tools by the Company so that his only expense is for two suits of overalls and jumpers.

At the end of the trial period, if the candidate has shown himself worthy of being accepted as an apprentice, he signs a contract, together with his parent or guardian and an official of the Company, indenturing himself to the Company for a term of four years. When the contract is signed the apprentice makes a payment of \$50 as evidence of good faith, and the set of tools loaned him is replaced by a set which he keeps permanently and for which he pays about \$11, according to the market price. These tools are marked, by the Company, with the name of the apprentice.

The fee is, of course, forfeited if the apprentice fails to fulfil his part of the contract. At the successful completion of the course the graduate is paid the sum of \$150 by the Company in consideration of faithful service.

It is possible, during the apprenticeship, to increase the earnings beyond the rates named, in two ways. During part of the





Scraping and Fitting Spindle Bearing

apprenticeship much of the work can be contract or piece work, and our records show that the average boy increases his earnings while on such work by a substantial percentage over regular rates.

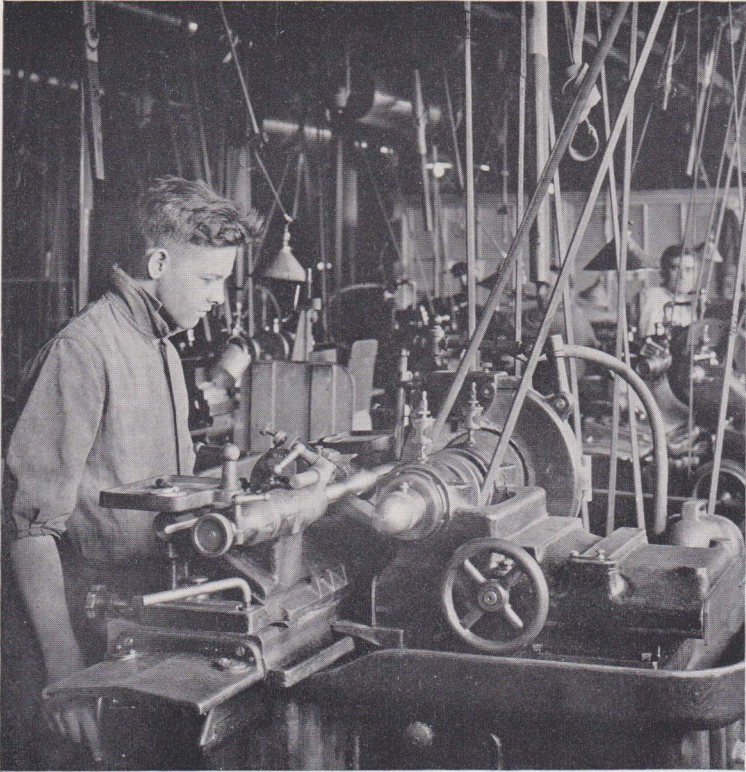
Piece work is given the apprentice as a part of his training in modern, production shop-work and to develop in him a spirit of industry which could not be gained as quickly or as well in any other way. Comparatively short piece work jobs are assigned and no apprentice is permitted to work on the same job longer than is necessary for him to acquire a thorough knowledge of the work.

The other means of increasing his earnings is by attaining a high rating due to the quality of his work, his scholarship, deportment, etc. If this standing in both shop and school is such that he is rated "Good" or "Excellent," his wages will be increased to a higher rate per hour than the regular rates.

### Drafting Apprentices

**B**EFORE being accepted as an apprentice in the Drafting Department the candidate must have had such technical or





Operating Plain Grinding Machine

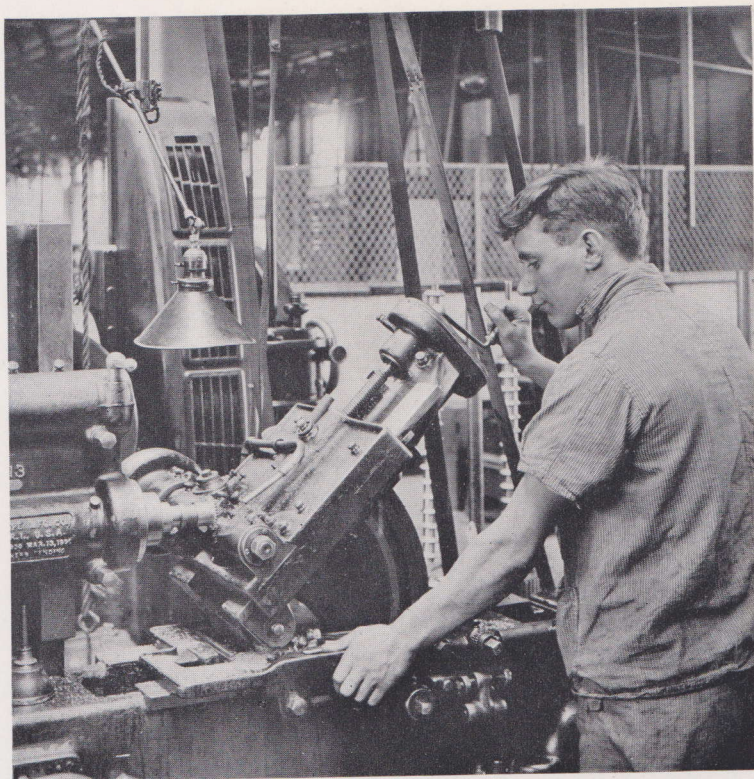
other preliminary training as to be equivalent to having successfully completed the course in the Technical High School of Providence.

It is preferred that such apprentices shall be at least eighteen years of age before commencing their apprenticeship. The term of apprenticeship is two and a half years, divided into three periods of ten months each.

The last six months of the first period are spent in the shop, to give the apprentice the very essential knowledge of machine shop practice. If the applicant proves satisfactory during his three months trial he enters into contract and pays a fee of \$25. A bonus of \$75 is paid him by the Company at the end of a faithful apprenticeship.

Our varied product makes it possible to give our drafting apprentices a variety of work, such as on milling machines, grinding machines, gear cutters, screw machines, small tools, gears and hobs, jigs and fixtures, tool drawing, etc. There is class work throughout the course.





Operating an Automatic Bevel Gear Cutting Machine

## Apprentices in Pattern Making

A LIMITED number of apprentices are taken in pattern making. For this trade the length of service is four years and the conditions of apprenticeship are essentially the same as for machinists. Apprentices in pattern making are given a period of training in the foundry during the course.

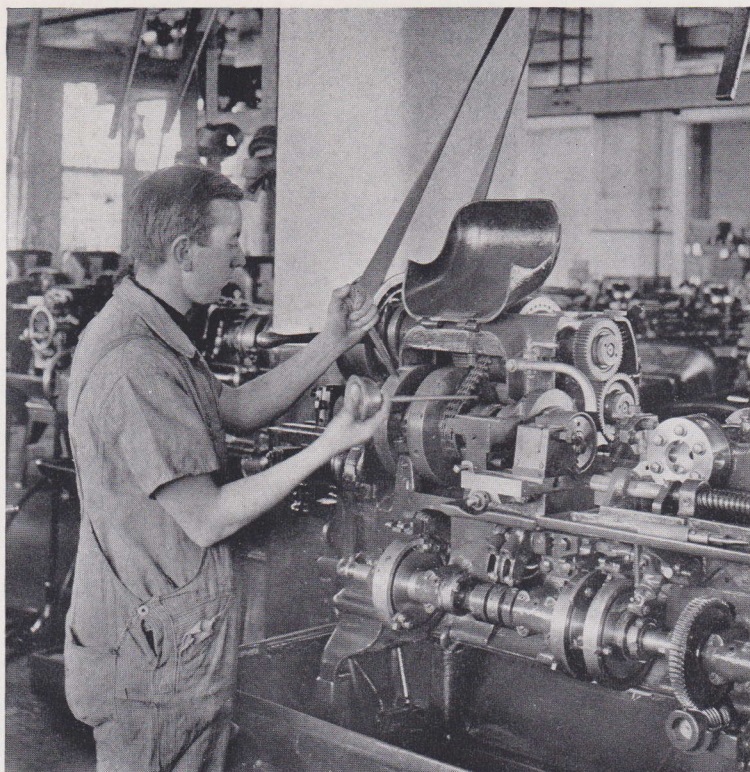
## Foundry Apprentices

MOULDING apprentices serve for three years, divided into three periods of one year each. The age limits are from seventeen to twenty years, and a grammar school education, at least, is required. A fee of \$25 is paid by the apprentice when he signs the contract, at the end of a three months trial period, and a bonus of \$100 is paid by the Company at the completion of a successful apprenticeship.

A set of tools, costing about \$14, is bought by each apprentice when he signs the contract.

Moulders' apprentices are given experience on floor work, bench





Setting Up and Running Off Screw Machine

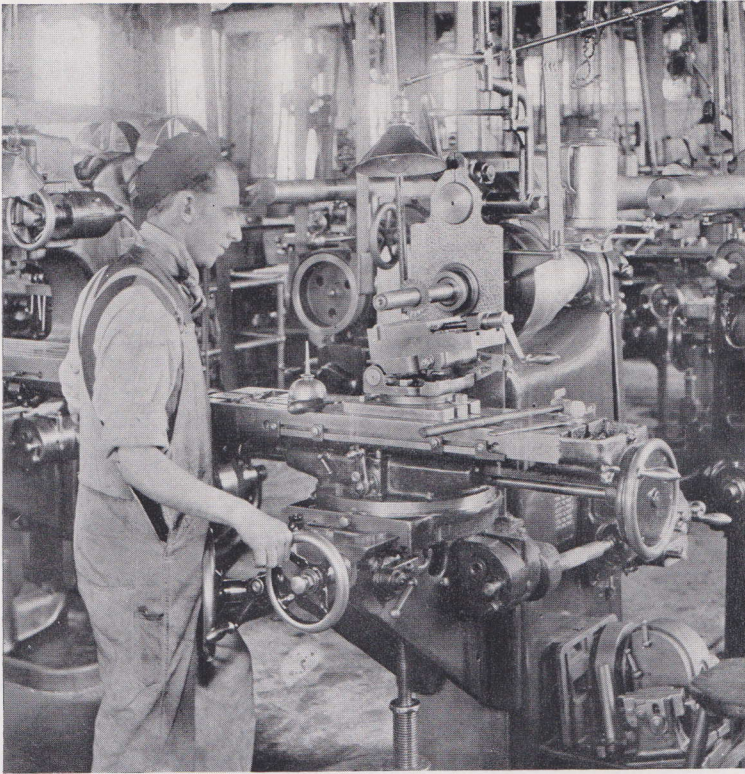
work, in the core room, and in cupola practice and there is class work in mathematics and drafting. The course is planned to give the boys an all-'round experience in foundry work and it offers an excellent opportunity for development for positions of responsibility in a big and important trade.

The core maker's apprenticeship is for one and a half years; three six months terms. Practice is given in both light and heavy core work and there is school work in mathematics and drafting. On signing the contract a fee of \$25 is paid by the apprentice and the Company pays a bonus of \$50 for the successful completion of the apprenticeship.

### Blacksmith's Apprentices

**W**E take a limited number of apprentices in the forge shop, the course covering three one-year terms. A fee of \$25 is paid when the contract is signed, at the close of the trial period, and a bonus of \$100 is paid by the Company for a faithful service of apprenticeship.





Operating a Universal Milling Machine in a Tool-Making Department

Our variety of forge shop work affords a good, general experience for the apprentices, and there is class work throughout the course planned to make the boys efficient in figuring and drafting all kinds of forged work.

### Reasons for an Apprenticeship Agreement

**I**T is our intention to take only such boys as apprentices who really have a desire and a purpose to learn the trade, and we believe this end is more fully assured by entering into a formal agreement with specified conditions. We believe it to be far more important for the apprentice to have a thorough grounding in all branches of the trade during the period when he is under instruction than to confine him to one particular line of work, where, though his earning power for the time being might be greater, it would not secure the varied experience and training which are important if he is to rise to a position of responsibility and skill in later life.





A Drafting Apprentice

We believe, also, in cases where a sum of money is paid for learning the trade, at the close of the trial period, when the contract is signed, that the agreement is given more serious consideration by both the boy and his parents, and that such a plan tends to keep out those applicants who simply "want a job" and have no special interest in mechanical work or in learning a mechanical trade.

A boy without financial resources, but living at home, can, by saving his wages during the trial period, have a sum more than enough to pay his entrance fee when it becomes due.

In the case of a boy who finds it impossible to pay the fee outright, or whose parents are so situated that such payment would really be a hardship, we arrange for a part payment when the contract is signed and for the payment of the balance in weekly instalments.

It is our purpose to so train boys that it will be of mutual benefit to have them stay with us. As a matter of fact, a very large per cent do stay with the Company — at least for an appreciable time after the completion of their apprenticeship.



## Machinist's Terms of Apprenticeship

(Terms for the other trades are essentially like these, the main difference being in the age limits, length of service, and rates of pay for some of the trades.)

1. Applicants for admission to apprenticeship must be not less than sixteen nor more than eighteen years of age. They must be physically sound, of good moral character, and have received an education equivalent at least to that required for graduation from the public grammar schools of the City of Providence.

2. If the applicant is accepted for trial his name will be registered and due notice given when he will be required to start.

3. The first six hundred hours (twelve weeks) of service shall constitute a term of trial. If the apprentice shall, during this term, prove satisfactory, and shall, before the expiration thereof, execute, together with his father or guardian, — or if he have no father or guardian, then with some other responsible party, — an agreement in the form hereto annexed, then his apprenticeship shall date from the beginning of the term of trial and shall continue for the full term, unless sooner terminated as hereinafter stated.

4. Apprentices will be required to serve for the term of four years, — each year to consist of two thousand four hundred and fifty-five working hours, which, with the usual working week of fifty hours, is equal to two hundred and ninety-five working days. The remaining working days in each year will be allowed apprentices for recreation, at such time or times as the Company shall direct.

5. Apprentices will be required to perform their duties with punctuality, diligence and fidelity, and to conform to the rules and regulations which are or may be adopted for the government of the shops.

6. Apprentices are not allowed to use tobacco in the shops during working hours.

7. Apprentices shall refrain from smoking cigarettes, — a custom generally regarded as deleterious to the health of young men. Indulgence in this practice may warrant the discharge of the apprentice.

8. Apprentices shall make up lost time at the expiration of each year, at the rate of wages paid during said year; and no year of service shall commence until the apprentice shall have fully made up all time lost in the preceding year.

9. The Company reserves the right, whenever the state of business demands it, to shorten the hours of labor, or whenever for any reason it shall stop the works, to suspend apprentices wholly or in part; and the making up of time so lost shall be at the discretion of the Company.

10. The Company also reserves the right, in its sole discretion, to terminate its agreement with any apprentice, also to discharge him from its employment for non-conformity with its rules and regulations, want of industry or capacity, indifference to his duties or improper conduct within or without the shops.

11. Apprentices will be paid for each hour of actual service (not including time allowed for recreation or time when work is suspended) the following wages: for the first year not less than        cents; for the second year not less than        cents; for the third year not less than        cents; and for the fourth year not less than        cents. If the Company shall terminate the apprenticeship during the time of trial, it will pay at the first year rate for the time worked.

12. Wages will be paid on the regular pay-days of the Company, as they may be established from time to time.

13. The Company will faithfully instruct the apprentice in the machinist's art and trade, in their shops, during the term of apprenticeship.

14. Graduates of the Providence Technical High School, well recommended by the Principal, may have their term of apprenticeship shortened at the discretion of the Company.

(See insert, inside back cover, for present rates of pay.)

# Machinist's Apprenticeship Agreement

**F**OLLOWING is the form of agreement entered into between the boy, his father or guardian and the Company :

AGREEMENT made this.....day of.....A.D. 19....., between the BROWN & SHARPE MANUFACTURING COMPANY, a corporation established in the City of Providence, in the State of Rhode Island, party of the first part ; .....(Name of Apprentice)..... of .....(Residence of Apprentice)....., party of the second part ; and.....(Father or Guardian of Apprentice)..... of .....(Residence)....., party of the third part.

WHEREAS the party of the second part is desirous of becoming an apprentice to the party of the first part, for the purpose of acquiring the art or trade of machinist.

## NOW THIS AGREEMENT WITNESSETH :

That the party of the first part, in consideration of the covenants herein contained on the part of the party of the third part, hereby accepts the party of the second part as an apprentice in the art or trade of machinist, subject to and in accordance with the "Terms of Apprenticeship," which are given on the reverse of this agreement and made part hereof.

The party of the second part, in consideration of such acceptance, hereby agrees to become the apprentice of the party of the first part in the machinist's art or trade, in accordance with the said "Terms of Apprenticeship," and to faithfully conform to the provisions thereof.

The party of the third part, in consideration of the covenants on the part of the party of the first part herein contained, for himself, his heirs, executors and administrators, covenants with the party of the first part, that he will pay the party of the first part as compensation for receiving the party of the second part as an apprentice, the sum of fifty dollars (\$50.00) — said sum to be paid at the expiration of the term of trial referred to in said "Terms of Apprenticeship."

The party of the third part, for himself, his heirs, executors and administrators, covenants and agrees, to and with the party of the first part, that the party of the second part shall well and truly conform to and abide by all the provisions of said "Terms of Apprenticeship" and of this agreement.

The party of the first part covenants and agrees, in case the party of the second part shall serve the full term of said apprenticeship (including the making up of lost time), as provided in said "Terms of Apprenticeship," shall in all respects comply with the provisions of said "Terms of Apprenticeship," to pay to the party of the second part, at the termination of said term of apprenticeship, in consideration of such faithful service, the sum of one hundred and fifty dollars (\$150.00).

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals (the party of the first part by....., its..... duly authorized for that purpose), the day and year first above written.

Executed  
in the presence of

{ .....  
.....  
.....  
.....

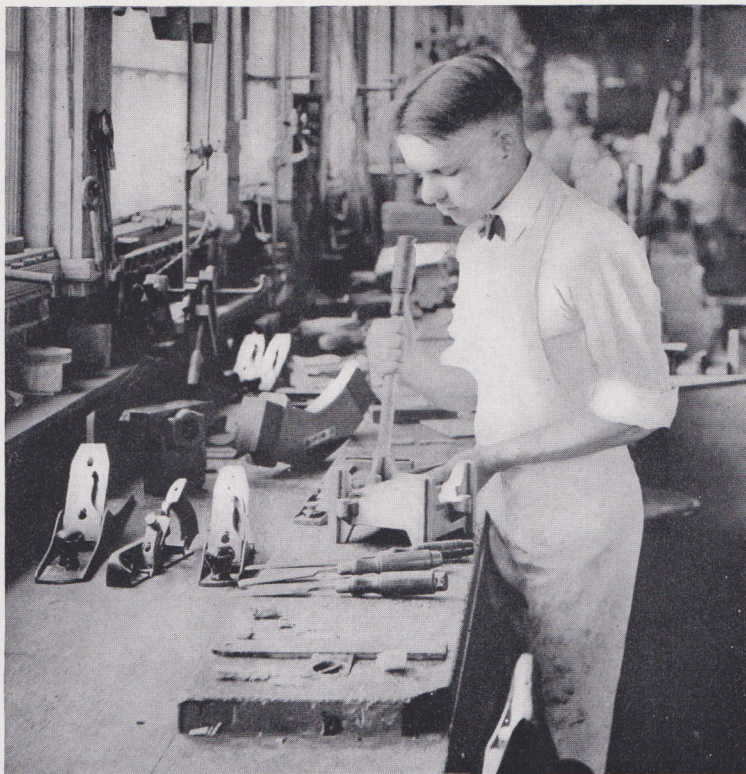
This is to certify that.....(Name of Apprentice)..... has served his full term of apprenticeship according to the above agreement.

BROWN & SHARPE MFG. CO.

Date.....

Signed .....





An Apprentice Pattern Maker

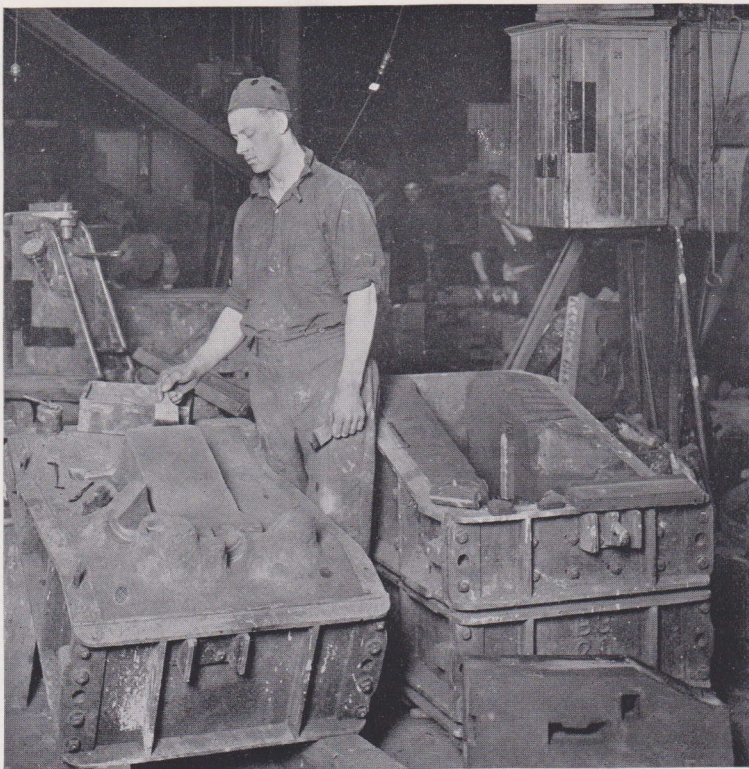
## Living Conditions in Providence

WE keep a registry of good rooming and boarding places near our works, for out-of-town boys. A number of these are with private families — some in the homes of men long employed by us. The Providence Y. M. C. A. has a new building with dormitories and provides excellent opportunities for a wholesome social life for young men away from home. This institution has also an Educational Department, conducting evening classes along many helpful lines.

The Rhode Island School of Design, located in Providence, also holds out exceptional opportunities for evening study in mechanical drawing, mathematics and other lines of training for skill and proficiency in the arts and crafts. In addition, the high schools of the city conduct evening classes in drawing and mathematics, which many of our employees attend.

It is our purpose not to confine ourselves to the education of the boy here in the works, but to stimulate him to properly develop himself, educationally and otherwise, during his leisure time.





• Apprentice Moulder on Floor Work

## Apprentice Activities

**W**E recognize the need of the right kind of physical and social development of young men and of their being broadened in ways that will tend to develop character, resourcefulness and initiative.

The Y. M. C. A. maintains well-equipped gymnasiums, swimming pools, shower baths, reading rooms, billiard rooms and clubs of different kinds.

We encourage the boys to take part in activities such as the Apprentice Team of the Brown & Sharpe Baseball League; in football and the shop bowling league. Each year the different departments compete for prizes in a shop athletic and swimming meet, in which the apprentices show a keen interest.

To promote a spirit of thrift we advocate participation in the shop co-operative saving and insurance plan—a plan by which life insurance may be bought through the Company on an attractive basis and for small weekly payments. Many of our boys are members of the Brown & Sharpe Mutual Benefit Association, main-





Blacksmith's Apprentice — Hand Forging

tained for sickness and death benefits of its members. Savings societies, such as were made popular by the Government War Savings Stamps, offer an incentive to lay the foundation of a bank account.

The reading of technical magazines is strongly urged, and by a systematic canvass a large number of the apprentices become subscribers to the trade papers most helpful in their line of work. Lectures by practical men, illustrated by the stereopticon, are planned not only to supplement the instruction given in the shops and class rooms, but to give the apprentices an insight into subjects of general interest and value to young men preparing themselves for mechanical pursuits.

### Early Apprenticeship at the Brown & Sharpe Works

THE Brown & Sharpe business was founded by David Brown and his son, Joseph R. Brown, each of whom had previously served an apprenticeship, the son having become a journeyman





A Corner of the Apprentice Schoolroom

but two years before the formation of the partnership with his father in 1833.

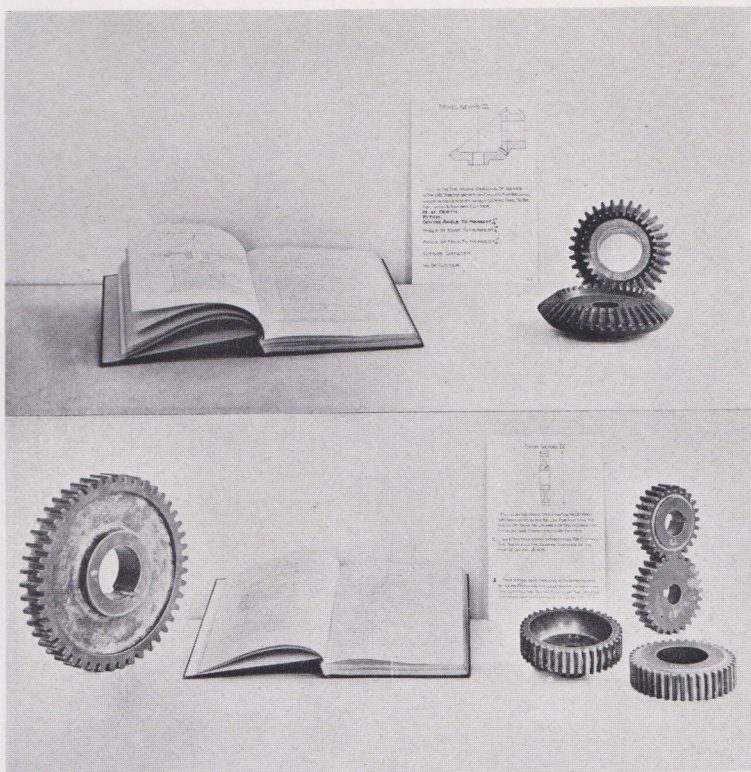
In 1848 Lucian Sharpe became an apprentice of Joseph R. Brown, who was then conducting the business alone, and five years later became his partner. This was the beginning of the apprenticeship system at the Brown & Sharpe works. Since that time it has been the established policy of the Company to take apprentices.

It may be interesting to note the terms of apprenticeship in those early days, as shown by a memorandum in the handwriting of Lucian Sharpe, telling of the conditions under which he served.

Mr. Sharpe was always strong in his advocacy of an apprenticeship system, and near the end of his life expressed the opinion that in the development of his business nothing could have taken the place of such a system — a system whereby a boy was indentured for a term of years, by a well-defined form of agreement, and an interest taken in him, to see that he faithfully fulfilled such an agreement.

As a part of the apprenticeship agreement, Mr. Sharpe was to





Sample Gears to be Measured and Figured

be allowed to make for himself a set of watch tools, and among those which he made during his apprenticeship was a watch lathe which is now in the Company's museum and which is pictured in this booklet.

The Company's present plant, located a half mile from the business centre of Providence and within a few minutes walk of the railroad station, includes several buildings of modern fireproof construction with a floor space of nearly 30 acres. The employees usually number between 6,000 and 7,000.

The product includes milling, grinding, gear cutting and screw machines, milling cutters, gears, sewing machines, hair clippers, and numerous precision instruments and small tools such as micrometer and vernier calipers, standard and special gauges, steel scales, etc.

There are branch offices and agencies in many of the larger cities of the United States and in several foreign countries.

Providence R.I. April 30<sup>th</sup> 1849.

Mr. Jos R. Brown

Sir:

At your request I write down the agreement between us, which I understand to be as follows

- 1<sup>st</sup> That I am to work for you from the time I commenced (Sept 13<sup>th</sup> 1848) to March 20<sup>th</sup> 1853 making 4 years 6 months & 8 days.
- 2<sup>nd</sup> That for the first two years 6 months & 8 days I am to work for you as an apprentice and for the last two years as a journey man.
- 3<sup>rd</sup> That during my apprenticeship you are to learn me the clock and watchmaking business and such other branches as you may pursue.
- 4<sup>th</sup> That I am to receive for <sup>my own</sup> said term of apprenticeship \$50.00 per. yr. and \$2.50 per week for board. Also a full set of watch tools as far as you are in the habit of manufacturing them. These I am to make during the said term of apprenticeship.
- 5<sup>th</sup> That I am to have two weeks <sup>each year</sup> for recreation, all other time that I may be absent to be made up after my apprenticeship

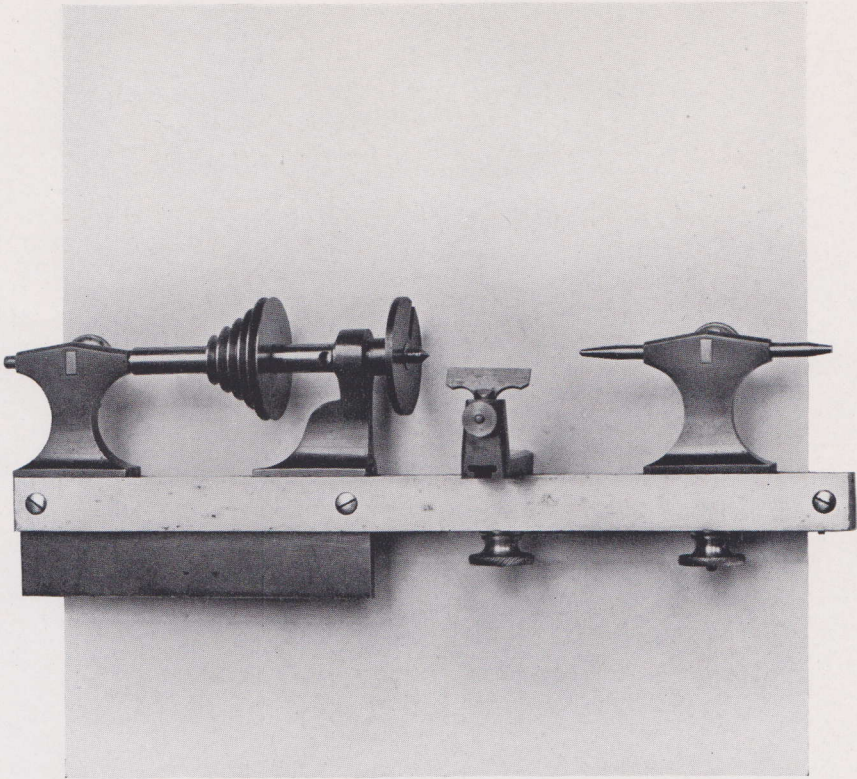
Lucian Sharpe's Terms of Apprenticeship, 1848-53

## Parents' Viewpoint

THE machinery industry is one of the biggest and most important industries in the world. We too seldom think how much we are dependent on men who are trained in apprenticeships such as ours. Our homes and our furniture, our clothing, books, street cars, automobiles, trains, in fact nearly everything we can think of is made and brought to us, directly or indirectly, by machinery designed and built by practical men. Such an industry offers opportunity for the widest development, and advancement is limited only by a man's own capacities.

There was a period when mothers and fathers looked with certain disfavor upon mechanical trades, preferring to see their boys start as clerks or at other "collar and cuff" work with hopes of their rising to the head of the business. It may have been because there is more or less noise and grime associated with the business of machinery making, and perhaps somewhat earlier rising is required than for those employed as clerks and in similar lines





Watch Lathe Made by Lucian Sharpe During His Apprenticeship

of work. Whatever were the reasons for avoiding the mechanical trades the time has come when parents, and boys themselves, appreciate the immense scope of the mechanics' arts, and while perhaps not exactly discrediting the "nicer" lines of work are coming to consider more and more the advisability of learning a good, stable trade.

*Application blanks, and any further information, will be gladly furnished on request*









